

AMENDMENT TO THE DRAWINGS

Enclosed is a replacement sheet for Fig.5 in which the word "PIPELINED" has been added to reference block 504.

REMARKS

Following entry of this amendment, claims 1-14, and 16-30 are before the Examiner.

The points made in the Final Office Action are now addressed in the order they were made.

Beginning on page 2 of the Office Action, the drawings were objected to for allegedly not showing the limitation in claim 28 of a hardware architecture that is pipelined. However, Applicant notes that the pipelined architecture of the processor in claim 28 need not be tied to the claimed methodology for computing transcendental functions. In the case of claim 28, this claim further limits its base claim 23, which is directed to a computer system, to one in which the processor has a hardware architecture that is pipelined. Since that is directed to conventional features only, a detailed illustration is not essential for proper illustration of the limitation in claim 28. Accordingly, to address the Examiner's concerns, Applicant has added the term "pipelined" to block 504 in Fig. 5, and inserted corresponding text in the Detailed Description (all without adding any new matter as the language is supported in the originally filed claim). Reconsideration and withdrawal of the objection to the drawings is therefore requested.

Turning now to the claims, these stand rejected as containing the term "can be" allegedly being a relative term, which renders the claim indefinite. Once again, to allay the concerns of the Examiner, claim 1 has been amended to refer to "the reduced argument is computed ...", to more positively define the claim limitation. A similar change has been made to claim 23. Such an amendment is submitted as merely a clarification that does not change the scope of the affected claim limitation. Reconsideration and withdrawal of that rejection is accordingly requested.

Turning now to the art rejections, the claims stand rejected as being anticipated by Fig. 1 of the Specification as filed, as well as associated text in the Background section of the Specification as filed. This is a previous rejection that has been maintained by the Examiner. Applicant respectfully disagrees with this rejection for the following reasons.

According to page 8 of the Final Office Action, where the Examiner explains why Applicant's previous arguments were not persuasive, the Examiner begins with first interpreting the claims as not requiring or limiting the *input argument* to any explicit range that is *close to the root of the function*. In other words, the Examiner interprets the limitation as "any input argument reasonably close to one would meet". Having construed the claim in this manner, the Examiner next looks to Fig. 1 and decides that the right hand column of the diagram refers to the *input argument being close to the root of the function*. This, however, is an improper interpretation of the prior art.

In Fig. 1, the right hand column is **not** used for the situation where the input argument is "close to a root of the function". As explained in the Background section, paragraph [0005],

Under certain situations, such as when the argument lies very close to a root of the function, alternative numerical techniques are used to limit the severity of the roundoff error. **Thus, rather than follow the general relationship, in operations 104-116 [right hand column] described in the previous paragraph, a completely different relationship is used ... depicted by the operations 120, 124, and 128 in the left-hand column of Fig. 1. [Emphasis added]**

Thus, one of ordinary skill in the art faced with this description will not consider the right hand flow as referring to the situation where an input argument is close to the root of a function.

Accordingly, the Final Office Action has not made a correct case of anticipation, because it has simply ignored an important teaching of Fig. 1, namely that in the prior art, when the input argument lies close to a root of the function, the lookup table methodology leads to significant roundoff error, such that an alternative numerical technique is used (namely the left hand column of Fig. 1). That does not teach or suggest the claimed limitation of *wherein the lookup table has at least one breakpoint for which the reduced argument is computed without roundoff error when the input argument is close to a root of a function*.

In addition, the limitation emphasized above refers to a breakpoint in the lookup table for which the reduced argument can be computed without roundoff error in the situation where the input argument is close to a root of the function. That includes a situation where there could be severe roundoff error if the conventional right hand flow were used. Applicant does not understand the logic used in the Final Office Action to link the conventional belief that the value of a function be, ideally, calculated without roundoff error, to Applicant's claim limitation of a lookup table whose breakpoints are modified such that there is at least one breakpoint for which the reduced argument for the function is computed without roundoff error. Accordingly, for all of the above reasons, the rejection of the claims as anticipated by Fig. 1 of the Specification as filed, is improper.

Nevertheless, Applicant has amended claim 12 with subject matter taken from claims 14 and 15. In addition, claim 23 has been amended to refer to a number of breakpoints of which at least one of B_0 and B_N are such that the reduced argument for them is computed without roundoff error. Finally, new claim 30 is submitted as being neither anticipated or obvious in view of Fig. 1, because the prior art does not teach or suggest a method for approximating the function of an input argument where the lookup table has a breakpoint for which the reduced argument is computed without roundoff error when the input argument is close to a root of a function by less than 2^{-9} . Support for this amendment may be found in paragraph [0013] of the Specification as filed.

Any dependent claims not mentioned above are submitted as being neither anticipated or obvious for at least the reasons given above in support of their base claims.

In sum, a good faith attempt has been made to explain why the rejection is improper and to present claims that are in condition for allowance. If there are any remaining issues that the Examiner believes can be resolved by telephone conference, a telephone call to the undersigned to discuss those issues is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, Post Office Box 1450, Alexandria, Virginia 22313-1450 on April 27, 2005.


Margaux Rodriguez April 27, 2005

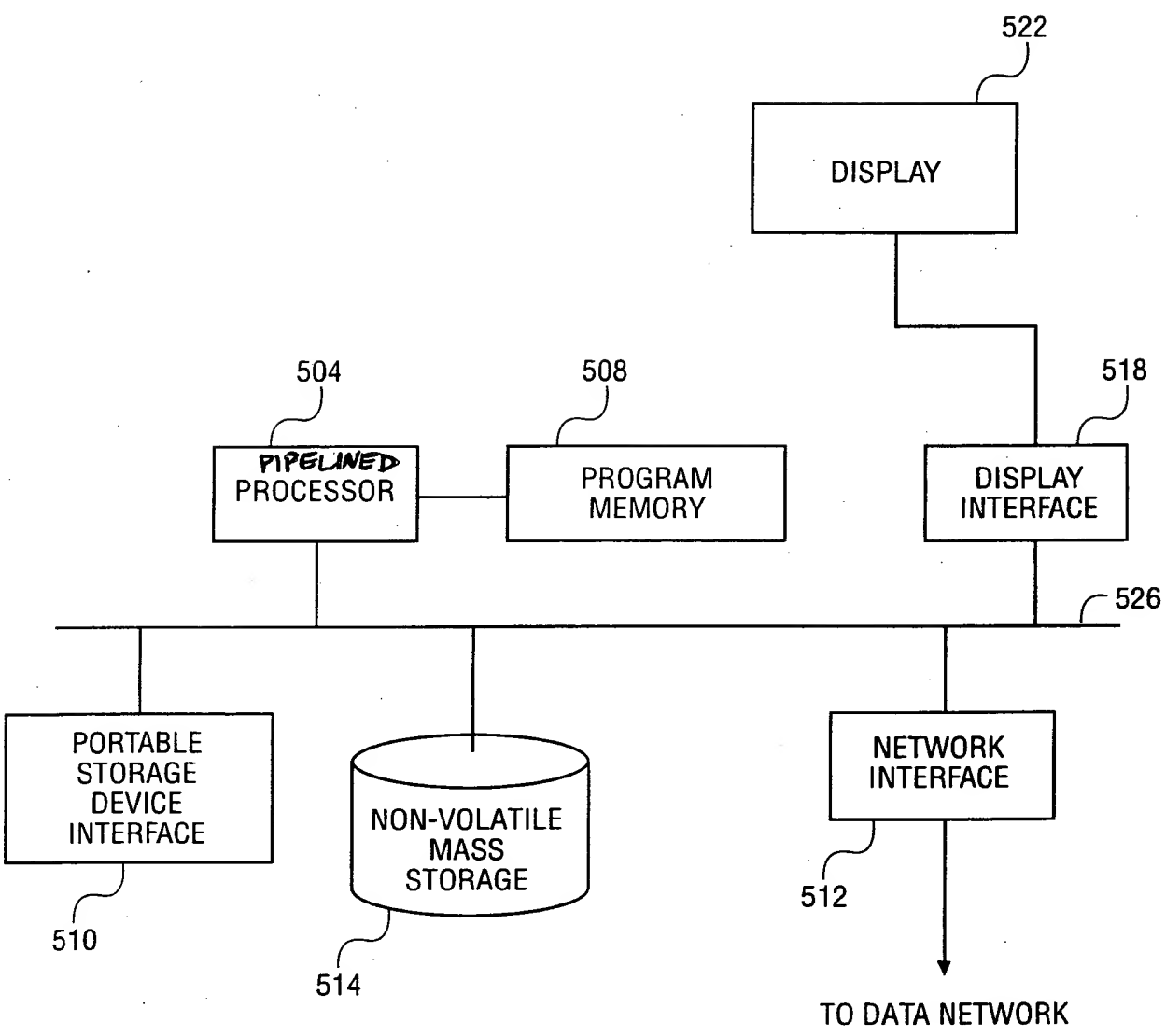


FIG. 5